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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/624,812	07/22/2003	Paul Marinier	I-2-0426.1US	6638

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EXAMINER	
AFSHAR, KAMRAN	
ART UNIT	**PAPER NUMBER**
2681	

DATE MAILED: 11/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/624,812	MARINIER, PAUL	
	Examiner	Art Unit	
	Kamran Afshar, 703-305-7373	2681	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-20* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,3-5,7-13 and 18-20* is/are rejected.

7)☒ Claim(s) *2,6 and 14-17* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *7/22/2003* is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claim 12 is rejected under 35 U.S.C. 102(e) as being anticipated by Dillinger (U.S. Patent 6,519,240 B1).

With respect to claim 12, Dillinger discloses a method for increasing the uplink and downlink capacity in a wireless system (See e.g. Co. 1, Lines 30-37, Co. 3, Lines 5-9), using a single time slot and frequency band for both the uplink and downlink transmissions (See e.g. Co. 3, Lines 16-25).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claim 1, 3-4, 13, 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dillinger (U.S. Patent 6,519,240 B1) in view of Blount (U.S. Pub. 2003/0031279 A1).

With respect to claims 1, 13, Dillinger discloses a method for increasing cellular system capacity (See e.g. Co. 1, Lines 30-37, Co. 3, Lines 5-9), receiving a signal in a time slot in a frequency band; transmitting a signal in the same time slot and the same frequency band (See e.g. Co. 3, Lines 16-25). However, Dillinger does not disclose a self-interference canceller to reduce the radio frequency self-interference created by receiving and transmitting signals. In the same field of endeavor, Blount discloses a self-interference canceller system (See e.g. Fig. 208) to reduce the radio frequency self-interference created by receiving and transmitting signals (See e.g. 210, 204, 208 of Fig. 2, & Page 2, Paragraphs [0019]-[0021]). Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to provide above teaching of Blount to Dillinger to facilitate a self-interference canceller for generating a cancellation signal resembling the device's own near signal and using the cancellation signal to remove at least a portion of the near signal from the composite signal to obtain a signal closer to the desired far signal as suggested by (See e.g. Page 1, Paragraph [0005]).

Regarding claim 3, Blount discloses separate antennas for receiving and transmitting (See e.g. 204, 210).

Regarding claim 4, Blount discloses using an adaptive antenna (See e.g. Page 3, Paragraph [0024]).

With respect to claims 18-20, as discussed above in claim 1, meets the claim rejection (See rejection claim 1).

5. Claim 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Dillinger (U.S. Patent 6,519,240 B1) in view of Kenworthy (U.S. patent 5,691,978).

With respect to claim

With respect to claim 5, Dillinger discloses a method for increasing cellular system capacity, a antenna (See e.g. Co. 1, Lines 30-37, Co. 3, Lines 5-9, Co. 5, Lines 38-42), receiving a signal in a time slot in a frequency band; transmitting a signal in the same time slot and the same frequency band (See e.g. Co. 3, Lines 16-25). However, Dillinger does not disclose a receiver section receiving a signal, transmitter section transmitting a signal; and an adaptive self-interference canceller connected between receiver section and transmitter section for canceller reducing radio frequency self-interference. In the

same field of endeavor, Kenworthy discloses a receiver section inherently receiving a signal (See e.g. 20 of Fig. 1), transmitter section inherently transmitting a signal; and an adaptive self-interference canceller connected between receiver section and transmitter section (See e.g. 27, 20, 10, 19 of Fig. 1) for canceller reducing radio frequency self-interference (See e.g. Co. Co. 2, Lines18-64). Therefore, it would have been obvious to one ordinary skill in the art at the time of the invention to provide above teaching of Kenworthy to Dillinger to provide an RF communication system and / or a techniques that is both bandwidth efficient and that maintains high throughput and uses the same spectrum at the same time as suggested by Kenworthy (See e.g. Co. 1, Lines 47-49 & 54-55).

Regarding claims 7-9, Kenworthy discloses an adaptive antenna and / or a single antenna for receiving and transmitting signals, which inherently antenna array for receiving and transmitting signals (See e.g. 17 of Figs 1, 4-6).

Regarding claims 10-11, Kenworthy discloses the antenna comprises a first antenna for receiving signals and a second antenna for transmitting signals and / or the antenna array for receiving signals and a second antenna array for transmitting signals (See e.g. 17, 21, of Figs. 1, 5).

Allowable Subject Matter

6. Claims 2, 6, 14-17 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

With respect to claim 2, the prior art of record fails to disclose or render obvious that the step of using a circulator, the circulator being connected between an antenna, a receiver, and a transmitter, whereby the circulator acts to reduce radio frequency self-interference by isolating the signal flow between the antenna and the receiver or between the transmitter and the antenna.

With respect to claim 6, the prior art of record fails to disclose or render obvious that further comprising a circulator connected between the antenna, the receiver section, and the transmitter section.

With respect to claims 14-15, the prior art of record fails to disclose or render obvious that the method further comprising the step of using a circulator and an adaptive antenna, whereby the adaptive antenna acts to reduce self-interference.

With respect to claims16-17, the prior art of record fails to disclose or render obvious that the step of using an adaptive self-interference canceller, whereby the canceller acts to reduce baseband self-interference by subtracting the self-interference from the rest of a received signal; and using a circulator, the circulator being connected at the junction of a transmitter output, an antenna, and a receiver input, whereby the circulator reduces radio frequency self-interference.

Conclusion

Any inquiry concerning this communication or earlier communication from the examiner should be directed to Kamran Afshar whose telephone number is (703) 305-7373. The examiner can be reached on Monday-Friday.

If attempts to reach the examiner by the telephone are unsuccessful, the examiner's supervisor, David Hudspeth can be reached @ (703) 308-4825. The fax number for the organization where this application or proceeding is assigned is (703) 872-9306 for all communications.

Kamran Afshar

DAVID HUDSPETH
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2600